MagiCAD for AutoCAD

Release notes for version 2021 UR-1

12/10/2020





Content

1	NEW FEATURES	3
1.1	Common	3
1.2	Ventilation and Piping	. 10
1.3	Electrical	. 18
1.4	Circuit designer	. 20
1.5	Schematics	. 22
2	RESOLVED ISSUES	. 23
2.1	Common	. 23
2.2	Ventilaion and Piping	. 23
2.3	Electrical	. 36
2.4	Circuit designer	. 37
2.5	Schematics	. 37
3	MANUFACTURER APPS	. 38

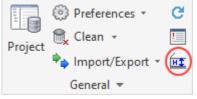


1 New features

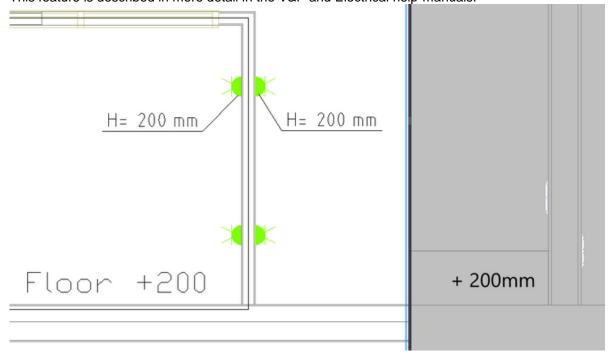
1.1 Common

Floor Offset Areas can be set in MagiCAD V&P and Electrical

It is now possible to draw floor areas where raised or lowered floors need to be taken into account in MEP installations. Each area has an offset from the storey it belongs to.



The offset affects the installation functions, modification functions and dimension texts used inside the area when operating with elevations inside the same storey. In addition, each area has a priority setting which creates flexibility e.g. when having smaller areas inside bigger ones. This feature is described in more detail in the V&P and Electrical help-manuals.

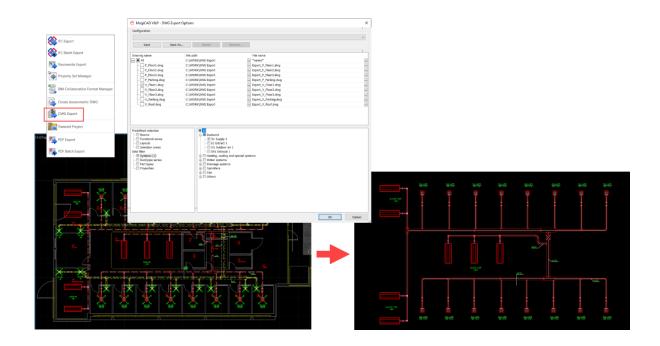


A new DWG Export function to export the selected objects to new drawings

It is now much easier to make copies of the drawings, with precisely the segments and devices that need to be shown in other drawings, with the new DWG Export function. The user can select from which drawings in the project the new drawings should be created and which objects from the original drawings should be in the new copy.

Using MagiCAD's Object Selection Set you can filter out the correct devices, for example when creating false ceiling drawings for the architects.





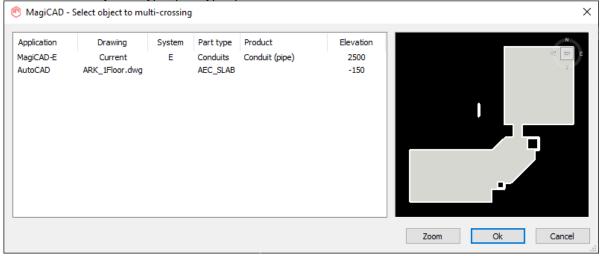
Multicrossing improvements

When selecting to cross over certain parts you can now specify more precisely from what discipline or link you want the crossing to be done:

MECTMC Select part over/under which crossing will be drawn [Hpv on mcE on Acad on current Drawing on Xref on]:

If there are more than one object that apply to selected filters in the area of the search circle, a dialog pops up where you can select which part you meant to cross over.

From the dialog you select which part you want to cross, you can see from which drawing the part is and what is the system type, part type, product and elevation.





Different offset values can now be set based on the segment's size for Provisions for Builderswork openings

Size ranges for different offsets can now be set in MagiCAD for AutoCAD. Using this function you can vary the offset for the segments depending on their size.

The segments for which these work are pipes and ducts in V&P, Cable trays, LED-stripes and Lighting tracks in Electrcial.

Conduits don't work with automatic provisions with the general settings, so they don't work for the size

ranges either.

Project Common template Project settings	Code		Description										
- Model drawings	Round		Round offsets										
- Schematic drawings	Round and rect					Round and rect offsets							
Storeys													
Ventilation													
Piping	MagiCAD V&P - Size range X												
🖶 Drainage	MagiCAD V&P - Siz	e range				X							
General													
Linetypes	General												
 Dimension text Texts for free text 	ID:		2										
Provision for builderswork openings	Code:		Round and re	ect									
- Settings													
- Size ranges	Description:		Round and re	ect offsets									
- Variable names	Limits / Circular			Limits / Rectangular									
- Legend templates	D max ^	Offset		B max ^	Hmax	Offset	Offset above						
 Report templates Connection node defaults 	100.0	50.0		200.0	200.0	100.0	150.0						
Connection node defaults Variable sets	200.0	70.0		400.0	300.0	200.0	250.0						
H valiable sets	300.0	100.0		600.0	400.0	300.0	350.0						
	400.0	150.0		1000.0	500.0		450.0						
		1		1000.0	500.0	400.0	450.0						
	500.0	200.0											
	600.0	250.0											
	800.0	300.0											
	1000.0	400.0											
	1200.0	500.0											

Object Selection improvement with preview for "Show selected items in report"

We added a preview to the V&P (MAGISEL), Electrical (MESEL) and Schematics (MSSEL) Object Selection Set reports:

MagiCAD V&P - Object selection bject selection set				
Manual selection				
Selected grawings Predefined selection Rooms Functional zones Layouts Selection areas Data filter Systems Duct/pipe series Parttypes V Properties (1)	Property Center of part	Operator > Greater than	Value 0.000000	
election result Select objects in the drawing Show selected items in report				



Drawing name C:\ProgramDat	System Supply 1	System type Supply air	Part Class Supply air devi	Position -24001625. 24	Center of part/I 2400	^	
C:\ProgramDat		Supply air		9025, -5675, 3500			
C:\ProgramDat	Supply 1	Supply air	Duct	-2400, -2157, 25	2588		
C:\ProgramDat	Supply 1	Supply air	Bend	-2400, -2425, 25	2588		
C:\ProgramDat		Supply air	Duct	-2400, -2600, 27	2763		
C:\ProgramDat		Supply air	Bend	-2400, -2775, 29	2938		
C:\ProgramDat		Supply air	Duct	-2400, -3854, 29	2938		
C:\ProgramDat	Supply 1	Supply air	Reducer/Expa	8349, -5025, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Duct	9025, -5675, 1750	1750		
C:\ProgramDat	Supply 1	Supply air	Bend	14300, -5025, 2	2938		
C:\ProgramDat		Supply air	Supply air devi	50, -1625, 2400	2400		
C:\ProgramDat	Supply 1	Supply air	Duct	50, -2157, 2588	2588		
C:\ProgramDat	Supply 1	Supply air	Bend	50, -2425, 2588	2588		The alla alla alla alla alla alla alla al
C:\ProgramDat	Supply 1	Supply air	Duct	50, -2600, 2763	2763		
C:\ProgramDat	Supply 1	Supply air	Bend	50, -2775, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Duct	50, -3854, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Supply air devi	2450, -1625, 2400	2400		all the to
C:\ProgramDat	Supply 1	Supply air	Duct	2450, -2157, 2588	2588		
C:\ProgramDat	Supply 1	Supply air	Bend	2450, -2425, 2588	2588		
C:\ProgramDat	Supply 1	Supply air	Duct	2450, -2600, 2763	2763		
C:\ProgramDat	Supply 1	Supply air	Bend	2450, -2775, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Duct	2450, -3837, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Reducer/Expa	2346, -5025, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Supply air devi	4775, -1625, 2400	2400		
C:\ProgramDat	Supply 1	Supply air	Duct	4775, -2157, 2588	2588		
C:\ProgramDat	Supply 1	Supply air	Bend	4775, -2425, 2588	2588		
C:\ProgramDat	Supply 1	Supply air	Duct	4775, -2600, 2763	2763		
C:\ProgramDat	Supply 1	Supply air	Bend	4775, -2775, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Duct	4775, -3837, 2938	2938		
C:\ProgramDat	Supply 1	Supply air	Supply air devi	7150, -1625, 2400	2400		
C:\ProgramDat	Supply 1	Supply air	Duct	7150, -2157, 2588	2588	~	

The preview shows all the selected objects:

MCACA-2502 The Provision Status can be changed using Change Properties

The provision status can be changed using change properties.

Before this update it was done only via the Property Palette to change many, or one by one in Part Properties.

📀 MagiCAD - Provision for Builderswork Openings				\times
Building service information New/existing provision New provision Provision is for ventilation Provision is for pipina		Geometry Shape © Circular Is recess Diameter/width [mm]:	C Rectangular	-9.2
📀 MagiCAD-E - Change Property				×
Configuration Property new -Texts, general symbols, etc. (1) -Provision for builderswork openings (1) New/existing provision	Value from		Save As Delete R	ename
Uncheck all	Value to:	New prov	rision Show reference part	



Quantity takeoff property set support

We added support for quantity property sets. BuildingSMART quantity takeoff XMLs

perty sets Configurations				
eneral				
Context	IFC export	~		
Discipline	V&P	~		
roperty sets				
Filter				
Name	Description		Туре	^
NS3420	Classification reference		IFC classification reference	
Pset_ProvisionForVoid	Property set for provisio	n for voids	IFC Property set	
MagiCAD Pset_Duct	MagiCAD's own proper	ty set for ducts	IFC Property set	
MagiCAD Pset_CustomPart	MagiCAD's own proper	tv set for custom parts	IFC Property set	
MagiCAD Pset_AirDevice	Add IFC property set	or air devices	IFC Property set	
MagiCAD Pset_Outlet/tap	Add IFC classification reference	or outlets/taps	IFC Property set	
MagiCAD Pset_Elbow	Add IFC quantity set	or bends	IFC Property set	
MagiCAD Pset_Joint	Copy selected	ior joint	IFC Property set	
MagiCAD Pset_TBranch	Edit	or T-branches	IFC Property set	
MagiCAD Pset_XBranch		or X-branches	IFC Property set	
MagiCAD Pset_Reduction	Delete	or reductions	IFC Property set	
MagiCAD Pset_Drainage MagiCAD Pset_SprinklerPipe	e	ty set for drainage pipes	IFC Property set IFC Property set	
wagicAD Pset_SprinklerPipe	wiagiCAD's own proper	ly set for sprinkler pipes	IFC Property set	~

Added "Import from XML..." button to "IFC Property set" dialog, so that external standards can be imported automatically.

Added "Type" column to "Property set manager" dialog's "Property sets" list view

ALCAR ICCO IN											
MagiCAD - IFC Quantity	set			:							
General											
General											
Name											
Description											
Applies to part types											
All part types											
Filter											
-											
IFC type		Native type		^							
IfcAirTerminalType		Supply air device									
IfcAirTerminalType		Extract air device									
IfcAirTerminalType		Outdoor air device Exhaust air device									
IfcAirTerminalType											
IfcAirTerminalType		Climate beam									
IfcBuilding		Building									
IfcBuildingElementProxy		Provision for builderswork op		~							
		Provision for builderswork op Other part (ductwork)		~							
IfcBuildingElementProxy IfcBuildingElementProxy				~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy				~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		•							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)									
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)									
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)									
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)									
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)		~							
IfcBuildingElementProxy IfcBuildingElementProxy Properties		Other part (durbunck)	Ok	Cancel							



Missing IFC types for the IFC4 certification have been added

We added support for: IfcCoolingTowerType IfcSolarDeviceType IfcLampType IfcElectricFlowStorageDeviceType IfcCommunicationsApplianceType IfcGeographicElementType IfcCableFittingType IfcAudioVisualApplianceType IfcProtectiveDeviceTrippingUnitType

IFC distribution ports support

IFC4 port definitions export has been changed to support the latest IFC4 specifications. Example of ports fixed in 2020 UR-1, to clarify what it is related to, see "Port definitions had the wrong positions in IFC Export" under resolved issues.

IFC Properties dialogs have been improved

The IFC Property set dialogs have been made more user friendly:

"Property sets" tab of Property Set Manager dialog

Added a filtering editbox,

Now "Property sets" list is sortable and has multi-selection.

IFC export V&P Description Classification reference Ifc 2x3 property set for space heaters	Type IFC classification reference IFC Property set	
V&P ~	IFC classification reference	
V&P ~	IFC classification reference	
Description ^ Classification reference	IFC classification reference	
Classification reference	IFC classification reference	
Classification reference	IFC classification reference	^
Classification reference	IFC classification reference	^
Ifc 2x3 property set for space heaters	IEC Property set	
	IFC Property set	
MagiCAD's own property set for Access Panel	IFC Property set	
MagiCAD's own property set for air devices	IFC Property set	
	IFC Property set	
MagiCAD's own property set for Box	IFC Property set	
MagiCAD's own property set for building	IFC Property set	
MagiCAD's own property set for circulation wat	IFC Property set	
MagiCAD's own property set for climate beams	IFC Property set	
MagiCAD's own property set for cold water pipes	IFC Property set	
MagiCAD's own property set for connection no		
MagiCAD's own property set for custom parts	IFC Property set	<u> </u>
	MagiCAD's own property set for 3 port valve MagiCAD's own property set for Access Panel MagiCAD's own property set for air devices MagiCAD's own property set for bends MagiCAD's own property set for building MagiCAD's own property set for building MagiCAD's own property set for circulation wat MagiCAD's own property set for coll water pipes MagiCAD's own property set for cold water pipes MagiCAD's own property set for connection no	MagiCAD's own property set for 3 port valve IFC Property set MagiCAD's own property set for Access Panel IFC Property set MagiCAD's own property set for bends IFC Property set MagiCAD's own property set for bends IFC Property set MagiCAD's own property set for bends IFC Property set MagiCAD's own property set for bends IFC Property set MagiCAD's own property set for bends IFC Property set MagiCAD's own property set for circulation wat IFC Property set MagiCAD's own property set for circulation wat IFC Property set MagiCAD's own property set for cold water pipes IFC Property set MagiCAD's own property set for connection no IFC Property set



IFC Property Set and IFC Classification Reference dialogs:

Are sizeable

Added filter to part types list

Part types and property lists are sortable

Ctrl+A selects all items in part types list

"Properties" list has multi-selection

MagiCAD - IFC Property	set			:
General				
Applies to		Туре	OInstance	
Name	M	agiCAD Pset_Joint	-	
Description	M	agiCAD's own property se	t for joint	
opplies to part types				
All part types				
Filter				
IFC type	Native	etype		^
✓ IfcAirTerminalType		y air device		
✓ IfcAirTerminalType	Extrac	t air device		
IfcAirTerminalType	Outdo	or air device		
✓ IfcAirTerminalType	Exhau	ist air device	CTRL + A	
✓ IfcAirTerminalType	Clima	te beam		
✓ IfcBuilding	Buildi	na		
✓ IfcBuildingElementProxy		sion for builderswork op		
	Other	nart (ductwork)		~
Properties				
Name	Туре	Source		^
PartType	lfcText	Part type		
Description	lfcText	Description		
UserVar1	lfcText	UserVar 1		
UserVar2	lfcText	UserVar 2		
RunningIndex	lfcldentifier	Running index		
ObjectId	lfcldentifier	Object ID (HPV)		
Status	lfcText	Status		
ProductCode	lfcText	Type name		
ConnectionSize_mm	lfcText	Connection size (duct c	onnecti	
Insulation	lfcText	Insulation (ductwork)		
Insulation_thickness_mm	IfcPositiveLengt		ess [m	
Insulation_material	lfcText	Insulation series, mater		
qv_SizingFlow_ls	IfcVolumetricFlo	Flow		~
Import from XML			Ok Ca	ncel

Now "IFC Property definition" dialog uses lookup comboboxes (a.k.a. filtering combobox).

📀 MagiCAD - IFC Property definiti	on	×
General Property name Property type	[lfcText	
Property value source		
Property source	adj Adjustment Adjustment (manifold)	¥



1.2 Ventilation and Piping

Network preview in V&P calculation reports

All calculation reports do now have a preview where you can get a much better overview of the system(s) you calculate and more easily identify any potential issues with the design.

) Supply) Extract					Outdoor supp Outdoor exhi				Genera	l results													Calculate resultin	g flow for unbalanced	terminals
/ Extrect					Outdoor extra	503¢																		Update balancing	
cation	Level	Node	System	Туре	Series	Product	Size	L [m]	Insulation	qv set [l/s]	qv [l/s]	v (m/s)	dpt [Pa]	K factor	dp/L [Pa/m]	pt [Pa]	pst [Pa]	adj	qv [%]	Warnings					
	Roof	1 :	S1	ROOT NOD						1960,0	1960.0														- 48
	Roof	1	S1	DUCT	Lindab Rec	LKR-600-60	600x600	2,5		1960,0	1960,0	5,4	1,3		0,51	189,1	171,3								an inter
	Roof		S1	BEND-90	Lindab Rec	LBR-600-60	600x600			1960,0	1960.0	5,4	14,6	0.821		187,8									and the second s
	Roof	1	S1	DUCT		LKR-600-60		2.7		1960.0	1960.0	5,4	1.4		0.51	173.2	155.4								-14
	Roof	1	S1	BEND-90	Lindab Rec	LBR-600-60	600x600			1960.0	1960.0	5,4	14,6	0.821		171,8									
	Roof	1	S1	DUCT	Lindab Rec	LKR-600-60	600x600	0,6		1960.0	1960.0	5,4	0.3		0,51		139,4							-	
	Roof	2	S1	CONN.NOD			600x600			1960,0	1960.0	5,4				156,9									
	Floor 3	3 :	S1	CONN.NOD			600x600			1960.0	1960.0	5.4				156.9									100
	Floor 3	1	S1	DUCT	Lindab Rec	LKR-600-60	600x600	0.3		1960.0	1960.0	5,4	0,1		0.51	156.9	139,1								
1	Floor 3			DUCT	Lindab Rec	t LKR-600-60		0,3		1960,0	1960,0	5,4				156,8									
I	Floor 3	4 1	S1	TAP	Safe	PSU-250-25				280.0	280.0	5,7		1.220		156,8						-			
	Floor 3		S1	DUCT	Safe	SR-250	250	1,8		280.0	280.0	5.7	2.9		1,63	135,1	115.6						200		
ъ.	Floor 3	5		T-BRANCH	Safe	TCPU-250-				280,0	280,0	5,7		1.133		132,2							24		
	Floor 3	1	S1	REDUCER	Safe		250/125				35.0	0,7				110.0						~ ~			P P
	Floor 3		S1	DUCT	Safe	SR-125	125	1,9		35,0	35.0	2,9			1.07		105.2								
<	Floor 3		S1		Safe	BU-125-90				35.0	35.0	2.9		0.454		108.0							0		
	Floor 3		S1	DUCT	Safe	SR-125	125	0.7		35.0	35.0	2.9			1.07		100.9					100	5 3		
	Floor 3			REDUCER	Safe		125/100				35.0	2,9				105,0								O P	5 6
V	Floor 3	6		SUPPLY		COLIBRI CO				35,0	35.0	4,5				104,7		0.49	100				29 A		3.00
	Floor 3		S1		Safe	SR-250	250	1,5		245.0	245.0	5.0			1,27		93,1							1	
h	Floor 3		S1	DUCT	Safe	SR-250	250	0,2		245,0	245.0	5,0				106,1								10 3	
	Floor 3	7		TAP	Safe	PSU-250-12		_		35.0	35,0	2.9		1.065		106,1					~		55000	-	
	Floor 3		S1		Safe	SR-125	125	0.7		35.0	35.0	2,9			1,07		85,3						6		
	Floor 3		S1	REDUCER	Safe		125/100				35,0	2.9		0.030		89,4							and a		
\bigtriangledown	Floor 3	8 :		SUPPLY		COLIBRI CO				35,0	35,0	4,5				89,1		0,57	100			•			
J	Floor 3		S1		Safe	SR-250	250	2,4		210.0	210.0	4.3			0,96		94,4								
(Floor 3		S1		Safe	BU-250-90				210.0	210.0	4.3		0.395		103.1									
	Floor 3	1 4	S1	DUCT	Safe	SR-250	250	3,3		210.0	210,0	4.3	3,1		0.96	98,8	87,8				1.				

Reduction/Expander lengths can now be defined

You can now define the specific length of the reducer/expander for ducts and pipes that you need for your design. (drainage pipes not included)

Ducts are defined as a general setting for all duct series (seen below), while the reduction lengths for the pipe series are defined in the pipe series dialog in the project.



Sprinkler and gas pipes do now have the new Change Z that has been previously implemented for drainage pipes

Now we have implemented the same Change Z to sprinkler pipes that we implemented in the 2021 main release for drainage pipes, where the user can review the changes before updating them to the drawing:



MagiCAD V&P - Height Level								
eight level in current floor coordinate syste	em						Preview	
		Top end		Bottom end	_	_		
op level:		2756.8 mm	B	2756.8	mm	- Ba		Barrance we
stallation level:		2726.8 mm	R:	2726.8	mm	B		3 4
lottom level:	Revert values	2696.8 mm	$\mathbb{F}_{\mathbb{F}}$	2696.8	mm	•		
		Over the top of:	₹					
		Below the bottom of:	=					
olerance:		0.0 mm						Ļ
oordinate system								
Use current floor coordinate system								
)Use absolute coordinate system								
								Refresh
								Ok Cance

This now shows, in green, which parts will adjust when changing the elevation. See here how it works for drainage pipes as the same logic is used, if the sprinkler pipes are drawn with a slope.

Settings and functionality for managing of object status

The lock status has been improved to avoid any lock conflicts. When running calculations in earlier versions of MagiCAD on elements with a status where the parts were locked, the locking was then transferred to the segment itself and even when changing the status of the segments to some status that didn't have a locked selection, the segments stayed locked

This does also affect how the locked parts are handled in the calculation reports.

Earlier it was possible to change the size of locked parts, even if the locked state was set in the status. Now it is only possible to change the locked state if it is set in the drawing, but not if it comes from the status. If the locked state is from the status, then this is also designated with (FL), while the parts locked only in the drawing are marked (L)

Locked state set in the drawing and the size can be changed (L):

) MagiCAD lit) - Ductwork	Sizing Re	port													
Supply	y Outdoor supply				O General re	sults			Ignore	diversity						
Extract				Outd	oor exhaust											
														Update siz	ing	
Location	Level	Node	System	Туре	Series	Product	Size	Old	L [m]	Insulation	qv [/s]	v [m/s]	dp/L [Pa/m]	Sizing method	Warnings	^
1	Floor 1	1	S1	ROOT NODE							160.0					_
	Floor 1		S1	DUCT	Safe		315 (L)		3,3		160,0	2,1	0,19	Max. velocity		
—	Floor 1		S1	DUCT	Safe		315 (L)		0,2		160,0	2,1		Max. velocity		
1 Ť	Floor 1	2	S1	TAP	Safe		315/125 (L)				40.0	3,3				
	Floor 1		S1	DUCT	Safe		125 (L)				40.0	3,3	1,37	Max. velocity		
1 (Floor 1		S1	BEND-45	Safe		125 (L)	Set due			40.0	3,3				
	Floor 1		S1	DUCT	Safe		125 (L)	25 (L) Set insulation 40.0		3,3	1,37	Max. velocity				
1 <	Floor 1		S1	BEND-45	Safe		125 (L)	125 (L) Highlight in the model 40.0 3.3								
	Floor 1		S1	DUCT	Safe		125 (L)	ringring	inc in the	mouer	40.0	3,3	1,37	Max. velocity		
İΫ́	Floor 1	3	S1	SUPPLY		COLIBRI CCa	125 (L)				40,0	3,3				
	Floor 1		S1	DUCT	Safe		315 (L)		2,2		120,0	1,5	0.11	Max. velocity		

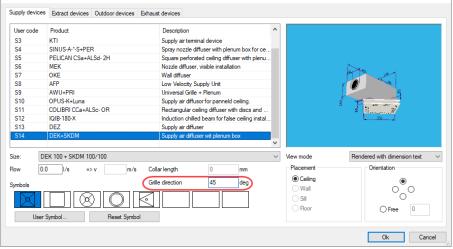


🔊 Mag	icae) - Ductwork	k Sizing Re	eport													
dit																	
Supplements	ply		Outdoor supply					O General re	sults			Ignore	diversity				
Extr	act				Outd	oor exhaust											
															Update siz	ing	
Location	n	Level	Node	System	Туре	Series	Product	Size	Old	L [m]	Insulation	qv [/s]	v [m/s]	dp/L [Pa/m]	Sizing method	Warnings	^
Т		Floor 1	1	S1	ROOT NODE							160,0					_
		Floor 1		S1	DUCT	Safe		315 (FL)		3,3		160,0	2,1	0,19	Max. velocity		
-	_	Floor 1		S1	DUCT	Safe		315 (FL)		0,2		160,0	2,1		Max. velocity		
1	Ť	Floor 1	2	S1	TAP	Safe		315/125 (FL)				40.0	3,3				
		Floor 1		S1	DUCT	Safe		125 (FL)				40.0	3.3	1,37	Max. velocity		
	<	Floor 1		S1	BEND-45	Safe		125 (FL)	Set insul	ation		40.0	3,3				
		Floor 1		S1	DUCT	Safe		125 (FL)	Highligh	it in the r	nodel	40.0	3,3	1,37	Max. velocity		
	<	Floor 1		S1	BEND-45	Safe		125 (FL)		1		40,0	3,3				
	Τ	Floor 1		S1	DUCT	Safe		125 (FL)		0,4		40.0	3,3		Max. velocity		
	∇	Floor 1	3	S1	SUPPLY		COLIBRI CCa	125 (L)				40.0	3,3				_
		Floor 1		S1	DUCT	Safe		315 (FL)		2,2		120,0	1,5	0,11	Max. velocity		- 1
		D 1		01	DUCT	C-1-		01E /FL1		0.0		100.0	10		March		

Locked state is set in the status and the size can't be changed (FL):

Grill direction setting has been added to the installation dialog for air devices

The grille direction can now be set in the installation dialog for air devices where it can be rotated:



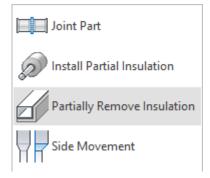
Select which sides will have insulation on rectangular ducts

It is now possible to select which sides, one, two, three or all four of a rectangular duct should have insulation:

🕙 MagiCAD V&P - Design Options				×
Rect Rectanglular duct v	Size: 200x100] Swapped	Locked:	Routing Smart Direct	T
Insulation Series: 	Flange Series: - Default - w [mm]: 20.0 Fittings Bends U	h [mm]: 20.0	ducers/Expanders	L=600



The insulation can also be edited using the new Partially Remove Insulation function.



The size of the cleaning covers in duct systems can now be changed after they have been installed

The size and type of the cleaning covers can now be changed in the drawing:

Property	Value
Part type	Access panel
System	S1 "Supply 1"
Storey	Floor 1
Storey variable 1	
Storey variable 2	
Center of part	H = 2950.0
Product	CL6 "Cleaning cover-040-020-oval"
Status	Not defined
Description	
UserVar 1	
UserVar 2	
UserVar 3	
UserVar 4	
UserVar 5	
UserVar 6	
UserVar 7	
UserVar 8	
UserVar 9	
UserVar 10	
UserVar 11	
UserVar 12	
UserVar 13	
UserVar 14	
UserVar 15	
UserVar 15	
Object ID	
	Override
L	Ovende

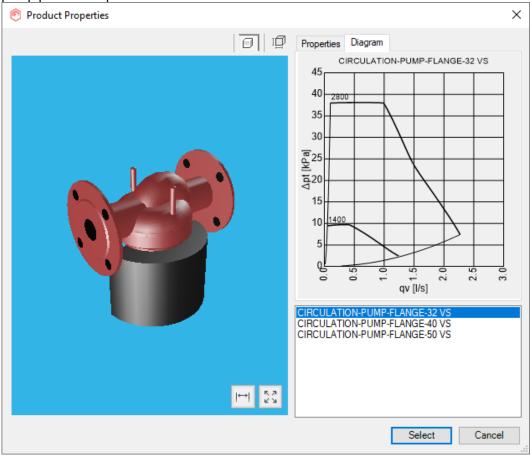
The options that work for the currently selected duct will be shown in the dialog that opens:

User code Product Description CL5 Cleaning cover-rect duct	
CL5 Cleaning cover-rect duct	
CL6 Cleaning cover-oval	
	-1
	61
	400
	901
	Ale
Size: Cleaning cover-040-020-oval View mode Rende	red with dimension text
	Ok Cancel



Upgrading pump curves

MagiCAD product database supports now variable speed pumps with frequency-controlled steering. The actual duty point of such pumps are calculated in the heating and cooling systems if "Calculate to pump pressure" option is selected.



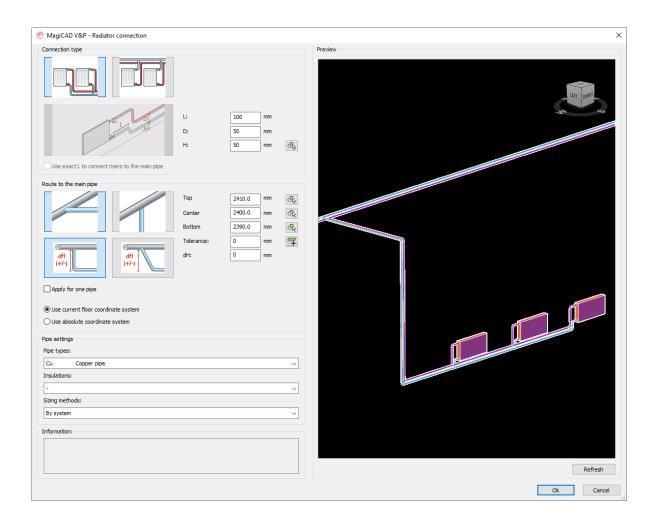
New radiator connection function

MagiCAD for AutoCAD did already automate part of the connecting of radiators to main pipes, while drawing, but this had to be done one radiator at a time and with limited connection options. This has now been vastly improved with a new radiator connection function where the user can adjust several parameters and change connection options to choose from a wider range of different connection variations.

The user can also preview the different options before approving them, making it easy to see the result and making sure the optimal design is achieved.







Diversity Calculations for Heating & Cooling Systems

We added support for Diversity calculations in Hydronic networks

MagiCAD V&P - Change Property		×
Configuration	Save Save As Delete	Rename
Property div Ductwork Heating, cooling and special systems (1) Diversity factor	Value to: Reset	€ ≵ ∧



The grille direction for drainage devices has been added to the Installation dialog and Change properties

Grille direction has been added for drainage system devices in the Installation dialogue and Change Properties:

🙆 MagiCAD V	&P - Dome	stic Water	and Drainag	e Device	e Selection		×
🗹 Install domesti	c water devic	ce			Install drainage device		
Code	Device ty	CW	HW	kPa	a mm		
K1		0.2	0.2	160	12		
K2		0.2	0.2	160		-	
K3		0.2	0.2	160	12		
B1		0.2	0.2	160	10	5	
B2		0.1	0.1	160	10	2	-
WM		0.2		80	12		230
S2		0.2	0.2	300	15		
WC1		0.1		70	10		
S1		0.2	0.2	160	12		
						View mode	Rendered with dimension text $\qquad \qquad
User code	Jser code Product Des				Description ^		
FD75	Floor drain-75						
FURO B75	5 FURO-007-B75-clinker K1			Floor drain Ø126. Floor: clinker K1. Bottom			
FD110	Floor drain-110					1 et and	
FL1	LA 600 x 40	00 + PKV 1	10		Floor basin 600 x 400 + PKV 110		
BIGG 110	BIGG 110 F	P-7102821			Gully of steel EN 1.4404. Sideoutlet Ø110		771
WC110 HI	WC square	hidden drai	n		WC square hidden drain		had " 1
FD50	Floor drain-						
BALDER50	BALDER 5	0 P-711809	0		Gully of steel EN 1.4404. Bottomoutlet Ø50		
WC110	WC1				¥		
Flow: 0.0	0000 l/s		(Grille	e direction 0 deg	View mode	Rendered with dimension text $\qquad \lor$
Distance							
Distance betwe	en domestic	water devid	es (dx)		150 mm dx		
Distance betwe				ces (dy)	150 mm		Ok Cancel
							UK Cancer

🔊 MagiCAD V&P - Change Property		×
Configuration	✓ Save Save As De	elete Rename
Property grille - Ductwork - Grille direction Grille direction	Value to:	B ₂





NFPA-13 sprinkler standard has been added to MagiCAD

The NFPA-13 standard wasn't available in MagiCAD, although the dialog incorrectly stated that it was (see the task under resolved issues - Incorrect text for sprinkler standard NFPA 15) We have now added the actual NFPA-13 standard.

-	- Sprinkler calculation		×
O Calculate network	κ.		
 Calculate system System 			
UserCode	Name		
SPR1	Sprinkler 1		
Settings			
Equivalent length of	fittings		
O EN 12845			
O CEA 4001			
NFPA 13)		
O NFPA 15			
O BS 9251:2014			
O EN 16925			
Ignore connectio	n branches shorter than:	50	mm
Show route			
Save data to cor	nnected drawings		
		Ok Car	ncel

Automatic default file name when printing sprinkler the sprinkler report

🥙 MagiCAD - Report W	indow										
Edit											
Design area	۲	General results			◯ System	results			Pump diagram		
Area 2: 1486 [mbar]	O	Sprinkler results	O Equivalent length values								
Property	Value	Unit	🎏 Bullzip I	PDF Printer 1	1.1 - Crea	te File				×	
Software version:	MagiCAD 2021 UR-1 Alpha										
Calculation date:	29.5.2020 14:17		General	Document	Image	Watermark	Merge	Security	About		
				Option S	ot						
Project	Demo/template project			(Default				\sim			
Project number:	1		in the second second	Ucidul	,						
Location:				Format							
				PDF		\sim					
Author:	MagiCAD Group										
				File Nam	-						
Design area:	Area 2	_		C:\User	s\mikael.e	ngstrom\Desk	op\Area 2	pdf			
Hazard class:	OH2 - Ordinary hazard OH2	_		Open	destinatio	n folder after o	reation	-			
Hydraulic model:	Hazen-Williams										
Calculation is based on:	CEA 4001	1		Open	the docur	ient after crea	tion				
Note:	Equiv. length of short conne	L < DU mm		Appe	nd if outpu	t exists					
Fluid characteristics:											
Density:	1000	[kg/m³]									
Dynamic viscosity:	1560.20	[kg/ms x 10e-6									
- ,		1									
Calculation input values:											
Area of design area:	20.9	[m²]									
Feed point	1	H = 5.3 [m]									
Weakest sprinkler:	24	H = 12.4 [m]									
Pressure at the weakest spri	600	[mbar]		E les la	10 1						
Max number of iterations:	100		Freewan	e Edition (max	IU users)						
Max inaccuracy of the press	1.0	[mbar]									
Max inaccuracy of the flow:	0.1	[l/min]					_				
						Save		Merge	Cancel		
C-factors of the pipes and K-		L		_						_	
Fe-35: Steel pipe Fe-35	120			~							



Improvements to the sprinkler report header

We added the same header in to sprinkler report which was in use in the other reports

New:

MagiCAD	Sprinkler report	
General results: Area 1		
Property	Value	Unit
Software version:	MagiCAD 2021 UR-1 Alpha-7	

Printing all the calculated sprinkler design areas

When calculating multiple sprinkler design areas at the same time, you can now print them all to the same report at the same time:

۲	📀 MagiCAD - Report Window								
Edit									
	Copy to clipboard		Canaral carulta						
	Print	~	 General results Sprinkler results 						
	Print all design areas								

1.3 Electrical

Enhancements to switchboard/host management

Elevations can be changed to hosts

Calculation related property columns are now available for switchboards

Changing elevations to switchboards/hosts changes also elevations of cables and cable packets connected to the switchboards/hosts

IFC types can be changed for both switchboards and hosts

Power values and automatic/manual calculation selection can be changed to switchboards

Short-circuit values and voltage drops can be shown for switchboards



earch from: OCurrent drawing	All model drawings					
vitchboards)		System 01	luc na l	Depth [mm] Height [mm]
Name		Description		iCAD-E - Choose columns	Width	Depth Imml Height Imml
			e iviag	ICAD-E - Choose columns		
MS			Select the	e columns you want to display		
SB 10. 1		Switchboard 10.1	Show	Name	Width	∧ Move up
			Show	Name	490	
5B10.2		Switchboard 10.2		Description	268	Move dow
SB 10.3				System	142	
5810.3				Status	40	
SB-AHU				IP	39	
				EXE	38	
				Installation	37	
				Voltage [V]	28	
				Earthing	28	
				Expansion surplus [%]	54	
				01	103	
				02	50	
				03	46	
				04	46	
				05	44	
Zoom to selected object				06	64	

Header cell height should be definable in switchboard schematic defs

It is now possible to define header cell height for vertical switchboard schematic. If defined cell height is smaller than the texts would require, a warning will be given.

With the old schematics the default height comes from the old calculation function that notices given column properties and heights.

Schema type:	Vertical, circui	ts in rows						
Description:	Switchboard	Schema A4 landscape						
Columns								
Property1	Property2	Property3	Len [wcs]	Align	Header 1	Header2	Header3	
Schematic symbol	Empty field	Empty field	80	Left	Symbol			^
Empty field	Circuit number	Empty field	15	Left	No			
Descriptions 1-3	Empty field	Empty field	60	Left	Description			
ripping curve	Nominal current	Fault current protection	20	Left	Trip	In [A]	Ircd	
Active power	Apparent power	Total apparent current	20	Left	P [kW]	S [kVA]	I [A]	
Cable description	Empty field	Total cable length [m]	55	Left	Cable		L [m]	
Phases	Earthing	Voltage drop [%]:	20	Left	Phases	Earthing	dV [%]	
								~
Insert	Delete							
Table width [WCS]:	270			Circuit cell	height [WCS]:	14.0 (inclu	udes 3 rows of text)	
Text style:	Standard	1	~	Header cel	height [WCS]:	20.0 (inclu	udes 1-3 rows of text)	
Text height [WCS]:	2.5			Symbol cel	prefix [WCS]:	10 (spa	ce before symbol)	

Note field for LED-stripes, lighting tracks and cable routes

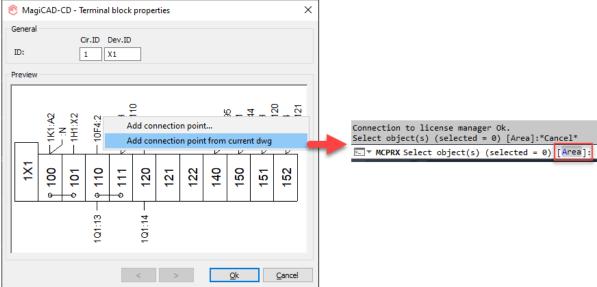
"Product note" field has been added for LED-stripes, lighting tracks, cable trays and conduits.



1.4 Circuit designer

Area function when adding connection points to Terminal block

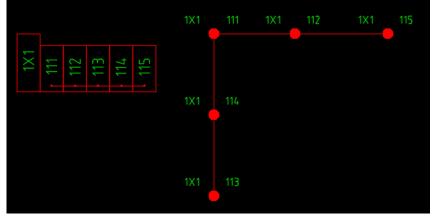
When adding connection points to Terminal block, you can now use "Area" function to get all unconnected connection points from the selected area to the terminal block in ascending order.



Jump wires in terminal blocks improvements

Connection points that are next to each other in a terminal block and are connected to each other are now shown with jumpers in all cases.

Also connection points which have same ID are now treated as individual connection points.



Change properties improvements

Editing your drawing is now much easier since a lot of new properties have been added to the Change Properties function.

It is now possible to change following properties from different object types:

- Owner ID visibility
- Partner position visibility
- ID visibility
- Destination visibility



Cable ID visibility Cable type visibility Numbering rule Symbol of child parts ID1, ID2, ID3 and ID4 Also following adjustments have been done to make this work better: Contact and switch are grouped together now under "Contact/Switch" group

Contact/Relay	aroup	renamed t	o "Rela	v" and	handles	only re	lavs
---------------	-------	-----------	---------	--------	---------	---------	------

MagiCAD-CD - Change Property		
Property Filter	~	
₽" <mark>.</mark>	Value from:	5
Cable ID visibility		⊖ k
···· Cable type visibility		
Cir.ID		
Destination visibility		
Dev.ID		
···· D visibility ···· DD1		
Owner ID visibility		
Partner position visibility		
⊕ Combined common part		
⊡. Common part	Value to:	J
Cir.ID		
Dev.ID		
ID3 ID4		
Owner ID visibility Partner position visibility		
	v	
· ·	· · ·	
Uncheck all		
Show reference part		
ject selection		
) Manual selection		
) Current drawing		
		Ok Cancel
	Apply	UK Cancel



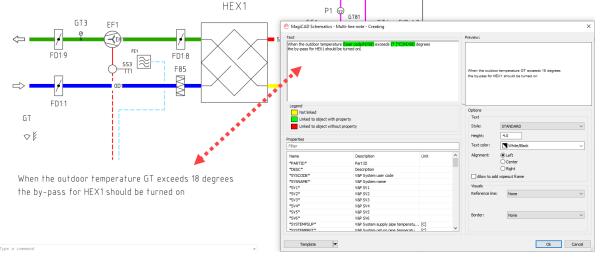
1.5 Schematics

Multi-line Notes with properties can now be created

We have now introduced a Multi-line Notes function with which the user can create a text where the property text values are part of the general text. This means that any updates and changes will be easily adjusted by the user. The text can be placed as a free text in the drawing or bound to a specific object as a reference.



All the properties in the same text can also be connected to different devices, meaning that a full text describing the various parts and properties in the drawing can be easily created and updated.





2 Resolved issues

2.1 Common

Selection set "Save"/"Save As" naming problem

When creating a Selection set, for example in IFC Export or Report, and then making some changes and clicking "Save" it instead saved it as a new Selection set, like when the user clicks "Save As", instead of saving over the selected one.

The issue has now been fixed and "Save" saves over the selected Selection set correctly.

Rounding default changed led to updated the texts, that caused issues for some users

When users' texts with 2 decimals in MC2020 were opened in MC2021, MagiCAD automatically changed all existing texts to 3 decimal because the default value is 3 decimal.

This was due to us changing the precision of the absolute elevations from 2 to 3 decimals in AutoCAD's Properties Palette: Absolute elevations now have 3 decimals in AutoCAD's Properties Palette

This caused a lot of extra work for some users, where they would have to change and update a lot of dimension texts in the drawings.

Changes made now to address this issue:

Ventilation and Piping: Now absolute elevations are shown with 3 decimals in COM, Property Palette and IFC Export and with 2 decimals in Dimension texts, Part Properties and Reports. Electrical: Now absolute elevations are shown with 2 decimals in dimension texts.

Some objects were incorrectly exported to the IFC

Some objects were incorrectly exported to the IFC, which resulted in them having the wrong shape. This has now been fixed.

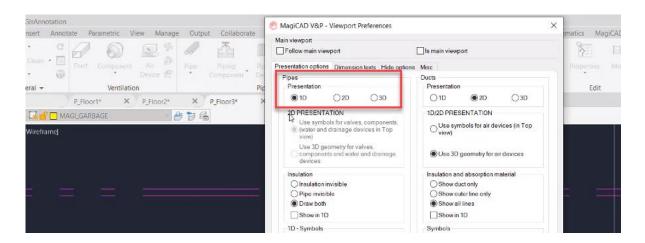
2.2 Ventilaion and Piping

Viewport presentation problems

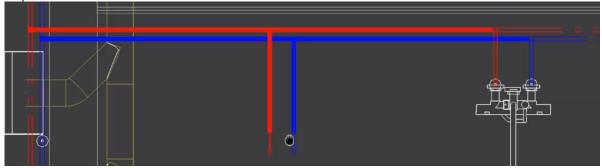
The viewport settings did not always match what was set in the drawing. For example having more than one viewport open and maximizing could lead to this situation.

An example where the setting is set to 1D but the pipe in the drawing is in 2D:





Sometimes one could see multiple "view settings" active in the drawing (below pipes as both 2D and 3D):



Only one decimal is shown in Change Properties for "Bend R/D"

Now "Bend R/D" in Change Properties shows 3 decimals for pipework and 2 decimals for ductwork.

🕙 MagiCAD V&P - Change Property	×
Configuration V Property	Save Save As Delete Rename
Filter Image: Image of the system Image: Image of the system	Value to:



Absolute coordinate system didn't work with riser function

When drawing ducts and pipes and right-clicking and selecting "risEr" the riser dialog opened, but when switching between the current and absolute options, the top/botton values weren't updated and stayed the same.

Now the values update correctly:

System S1 Supply 1 ~	Height Level Use current floor coor Use absolute coordin	
estination) Upward) Upward and downward) Downward	Storey height Top level Bottom level	3500.0 3500.0 0.0
dentification Synchronize ID numbers		

Issue with Branch- or Network selection with climate beams

Cooling beams with integrated reducers weren't selected when selecting elements using "Branch",

```
"Network" and "Between":
```

```
Command: MAGISEL
Select parts [Single part/Branch/Network/sYstem/bEtween/beTween all/roOM/arEA/lAYout]:
```

The other parts of the network became selected, while the the cooling beams always remained unselected.

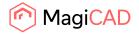
This has now been fixed and these cooling beams do also become selected.

The dptot value for cooling beams wasn't shown in the Property Palette and the IFC Export

The issue was that dptot was always shown as 0.0 for Cooling Beams in the AutoCAD Properties Palette and IFC Export, but MagiCAD's Part Properties showed the correct value. Now the correct value is also shown in the Properties Palette and in the IFC Export.

"Canceling" wasn't done correctly after a Z-elevation change

When drawing from a water device and clicking on some main pipes you get the conflict dialog (if it is set ON in the user preferences) if there are some differences in the segment sizes.



🙆 MagiCAD V&P - Pipe conflict	×
Cold water Active pipe: Cu-12 Selected part has: Cu-22	
Hot water Active pipe: Cu-12 Selected part has: Cu-22	
 Change active settings Keep active settings 	
Ok	Cancel

If you clicked "Cancel" here and then made some adjustments, for example to the Z-elevation to draw some other height first, then the pipes were immediately connected to the main pipes you previously clicked on, right after the Z-elevation dialog has been closed.

In other words did the function connect the pipes after showing the conflict dialog, regardless of if you chose "Cancel" and wanted to draw something else in between.

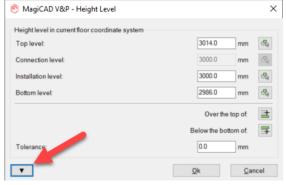
This has now been fixed and you can continue to draw normally after clicking "Cancel" in the conflict dialog and the function does not connect the pipes afterwards.

Folding the old Change Z dialog set the new dialog to become folded as well

In MCACA 2021 was the feature for elevation changes for drainage pipes implemented, which included a new dialog.

However when folding the old dialog, the new dialog did also become folded. The work around was to return to the old dialog and unfold it.

Now folding the old dialog doesn't fold the new one:





🕙 MagiCAD V&P - Height Level					×
Height level in current floor coordinate system	Top end	Bottom e	nd	Preview	
Top level: Installation level: Bottom level: Revert valu	B014.0 mm 3000.0 mm es 2986.0 mm	Be 3014.0 Be 3000.0 Be 2986.0	mm Sta		٢
	Over the top of: Below the bottom of:				
Tolerance:	0.0 mm				

Changing duct size with Find & replace

Fixed an Issue with the dialog making it difficult to change the duct size with Find & Replace: You had to make the selection twice or cancel the dialog once to get it done.

The Report listed identical reducers to different lines

Sometimes similar reductions were on different lines in Report. This has now been fixed.

ort					×
Product	Connection size (main/	Duct/pipe length (m)	Number of similar	Status name	^
Fe-35 "Steel pipe Fe-35"	15/20/15		4		
Fe-35 "Steel pipe Fe-35"	25/20/25		2		
Fe-35 "Steel pine "	^{25/50}		48		
Fe-35 **			-		-
_, pipe Fe-35"	25/20				
Fe-35 "Steel pipe Fe-35"	40/25		3		
Fe-35 "Steel pipe Fe-35"	50/40		2		
Fe-35 "Steel pipe Fe-35"	65/50		4		
Fe-35 "Steel pipe Fe-35"	50/25		2		
Fe-35 "Steel pipe Fe-35"	65/50		1		
Fe-35 "Steel pipe Fe-35"	65		3		
	Product Fe-35 "Steel pipe Fe-35" Fe-35 "Steel pipe Fe-35"	Product Connection size (main/ Fe-35 "Steel pipe Fe-35" 15/20/15 Fe-35 "Steel pipe Fe-35" 25/20/25 Fe-35 "Steel pipe Fe-35" 25/20 Fe-35 "Steel pipe Fe-35" 25/20 Fe-35 "Steel pipe Fe-35" 40/25 Fe-35 "Steel pipe Fe-35" 50/40 Fe-35 "Steel pipe Fe-35" 50/25 Fe-35 "Steel pipe Fe-35" 50/25 Fe-35 "Steel pipe Fe-35" 50/25	Product Connection size (main/ Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 15/20/15 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 25/20/25 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 25/20/25 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 25/20 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 25/20 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 40/25 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 50/40 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 50/25 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 50/25 Duct/pipe length (m) Fe-35 "Steel pipe Fe-35" 50/25 Duct/pipe length (m)	Product Connection size (main/ Duct/pipe length (m) Number of similar Fe-35 "Steel pipe Fe-35" 15/20/15 4 Fe-35 "Steel pipe Fe-35" 25/20/25 2 Fe-35 "Steel pipe Fe-35" 25/20/25 48 Fe-35 "Steel pipe Fe-35" 25/20 48 Fe-35 "Steel pipe Fe-35" 25/20 48 Fe-35 "Steel pipe Fe-35" 40/25 3 Fe-35 "Steel pipe Fe-35" 50/40 2 Fe-35 "Steel pipe Fe-35" 50/40 2 Fe-35 "Steel pipe Fe-35" 50/25 2 Fe-35 "Steel pipe Fe-35" 65/50 4 Fe-35 "Steel pipe Fe-35" 50/25 2 Fe-35 "Steel pipe Fe-35" 50/25 2	Product Connection size (main/ Duct/pipe length (m) Number of similar Status name Fe-35 "Steel pipe Fe-35" 15/20/15 4 4 4 4 Fe-35 "Steel pipe Fe-35" 25/20/25 2 4 4 4 Fe-35 "Steel pipe Fe-35" 25/20 48 4 4 4 4 Fe-35 "Steel pipe Fe-35" 25/20 48 4

MCACA-2495 Air Handling Unit went to the wrong location during the installation

When installing an Air Handling Unit it was placed in a completely different location than where the user clicked.

The reason for this was handling of the coordinate system in AutoCAD and has now been fixed.



The reducer/expander wasn't drawn correctly between the duct and the air device

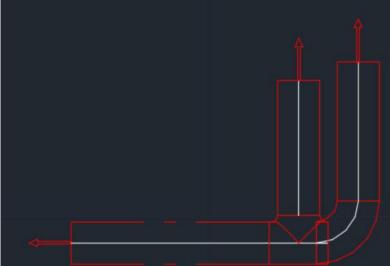
Only a "dot" was drawn in some cases instead of the reducer, between the duct and the air device. This has now been fixed:

🔗 MagiCAD V&P - Part Pro	perties	×
Property	Value	
Part type	Reducer/Expander	
System	S1 "Supply 1"	
Storey	Floor 1	
Storey variable 1		
Storey variable 2		
Center of part	H = 2800.0	
Product	Circ "Circular duct"	
Connection size	125/100	
Status	Not defined	
Description		
UserVar 1		
UserVar 2		
UserVar 3		
UserVar 4		
UserVar 5		

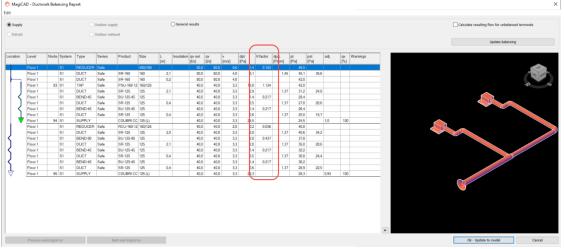
It was possible to move a fitting inside another fitting

It was possible to move a fitting inside another one if the "fit on len"-value was small enough. On greater values it correctly gave an error.

This has now been fixed.







The K-value wasn't shown in the Calculation report

The K-factor column was missing and has now been added

It is also available via Edit -> "Copy to clipboard" from the report:

1	A	B	C	D	E	F	G	н	1 I.	J	ĸ	L	M	N	0	P	Q	R	S	T
	Level	Node	System	Туре	Series	Product	Size	L	Insulation	qv set	qv	v	dpt	K factor	dp/L	pt	pst	adj.	qv	Warnin
								[m]		[l/s]	[l/s]	[m/s]	[Pa]		[Pa/m]	[Pa]	[Pa]		[%]	
	Floor 1		S1	REDUCER	Safe		400/160			80	80	0,6	1,4	0.152		46,5				
	Floor 1		S1	DUCT	Safe	SR-160	160	2,1		80	80	4	3,1		1,45	45,1	35,6	i		
	Floor 1		S1	DUCT	Safe	SR-160	160	0,2		80	80	4				42				
1	Floor 1	93	S1	TAP	Safe	PSU-160-1	160/125			40	40	3,3	10,8	1.134		42				
	Floor 1		S1	DUCT	Safe	SR-125	125	2,1		40	40	3,3	2,9		1,37	31,2	24,8			
	Floor 1		S1	BEND-45	Safe	BU-125-45	125			40	40	3,3	1,4	0.217		28,4				
)	Floor 1		S1	DUCT	Safe	SR-125	125	0,4		40	40	3,3	0,5		1,37	27	20,6	i		
	Floor 1		S1	BEND-45	Safe	BU-125-45	125			40	40	3,3	1,4	0.217		26,4				
2	Floor 1		S1	DUCT	Safe	SR-125	125	0,4		40	40	3,3	0,6		1,37	25	18,7	'		
3	Floor 1	94	S1	SUPPLY		COLIBRI C	125 (L)			40	40	3,3	24,5			24,5		1	100)
4	Floor 1		S1	REDUCER	Safe	RCU-160-1	160/125			40	40	2	0,2	0.036		40,8				
5	Floor 1		S1	DUCT	Safe	SR-125	125	2		40	40	3,3	2,8		1,37	40,6	34,2			
5	Floor 1		S1	BEND-90	Safe	BU-125-90	125			40	40	3,3	2,8	0.437		37,8				
7	Floor 1		S1	DUCT	Safe	SR-125	125	2,1		40	40	3,3	2,8		1,37	35	28,6	i		
3	Floor 1		S1	BEND-45	Safe	BU-125-45	125			40	40	3,3	1,4	0.217		32,2				
9	Floor 1		S1	DUCT	Safe	SR-125	125	0,4		40	40	3,3	0,5		1,37	30,8	24,4	4		
D	Floor 1		S1	BEND-45	Safe	BU-125-45	125			40	40	3,3	1,4	0.217		30,2				
1	Floor 1		S1	DUCT	Safe	SR-125	125	0,4		40	40	3,3	0,6		1,37	28,9	22,5			
2	Floor 1	95	S1	SUPPLY		COLIBRI C	125 (L)			40	40	3,3	28,3			28,3		0,93	100)

The K-value wasn't shown in the calculation report, if the dp of the fitting was negative The K-factor was not shown in case it was negative.

Note: This was only noticed in MagiCAD for Revit, as the K-factor column was not visible earlier (see task: "The K-value wasn't shown in the Calculation report" above)

	Supply					Ooutda	or supply				Con	eral result							or unbalan		
						Outdo	or supply				Gen	erai result	2				late result	ing flow f	or unbaian	cea te	erminals
۲	Extract					Outdo	or exhaust														
																		Upda	ate balanci	ng	
_																					
Loc	ation	Level	Node	System	Туре	Series	Product	Size	L [m]	Insulatio		qv [l/s]	v [m/s]	dpt [Pa]	K factor		pt [Pa]	pst [Pa]		qv [%]	Warnings
Т		Floor 1	1	E1	ROOT NO						1050.0	1050.0								_	
		Floor 1		E1	DUCT	Rect		200x200	17,7	EI120 b/	1050,0	1050.0	26,3	708,9		39,99	-1511,4	-1924,9			High dp
		Floor 1	2	E1	T-BRANC	Rect		200x200/20		EI120 b/	1050,0	1050,0	26,3		-0.263		-802,5				
T		Floor 1		E1	DUCT	Rect		200x200	11,0	EI120 b/	350.0	350,0	8,8	53,1		4,82	-802,5	-848,5			
		Floor 1		E1	REDUCE	Rect		200x200/31				350,0	8,8	2,3	0.050		-749,4				
		Floor 1	3	E1	EXTRACT		PELICAN	315 (L)			350.0	350,0	4,5	747,1			-747,1			100	Not in balance
		Floor 1		E1	DUCT	Rect		200x200	6,8	EI120 b/	700.0	700.0	17,5	124,3		18,19	-711,9	-895,6			
<		Floor 1		E1	BEND-90	Rect		200x200		EI120 b/	700,0	700,0	17,5	91,9	0.500		-587,6				
(I.		Floor 1		E1	DUCT	Rect		200x200	9,4	EI120 b/	700.0	700,0	17,5	171,1		18,19	-495,7	-679,5			



Description for radiators couldn't be deleted

The Description in radiators, in Part Properties, couldn't be deleted, only replaced with other texts. This has been fixed and the Description text can now be removed.

The "Lock dp"-field was disabled for balancing valve (zone valves)

The "Lock dp"-field was disabled in balancing valves. This issue has been fixed and the value can be edited again.

MagiCAD V&P - Part Proper	rties	×
Property	Value	^
Part type	Zone valve	
System	VP1-return "Värme primär"	
Storey	Plan 1	
Storey variable 1		
Storey variable 2		
Center of part	H = 2400.0	
Product	RV1 "STAD/F-15/14"	
Manufacturer	TA	
Connection size	15	
Status	Not defined	
National code	PSA	
Description		
UserVar 1		
UserVar 2		
UserVar 3		
UserVar 4		
UserVar 5		
UserVar 6		
UserVar 7		
UserVar 8		
UserVar 9		
UserVar 10		
UserVar 11		
UserVar 12		
UserVar 13		
UserVar 14		
HeerVar 15		~
FLOW		
Is a measuring valve		
Lock dp		
kPa		
Object ID		
		Override
Properties Size	Pick from schematics Change RI	
3/26	ordige hi	



MagiCAD froze if "Fall per mil" was set to more than 500

MagiCAD froze if you set more than "500" as the value in the Drainage Pipe Options. Now values higher than 500 aren't allowed, nor values under 0:

🙆 MagiCAD V&P - Drainage Pipe	Options	×
Series: Select series	~	Routing
Size: Locked:	Fall [per mill]: 555 MagiCAD	O Direct
- s [mm]: 0 Alignment	0.00 500.00 !) Upward Downward
C C Extra offset O O O O O	ОК]
Status: Not defined	~	Installation code: Not selected ~ Close

It wasn't possible to change the pressure drop in heating/cooling/special system nodes of type "None"

Fixed an issue related to changing the pressure drop of connection node "None". The value was "stuck" after the installation of the node and couldn't be changed.

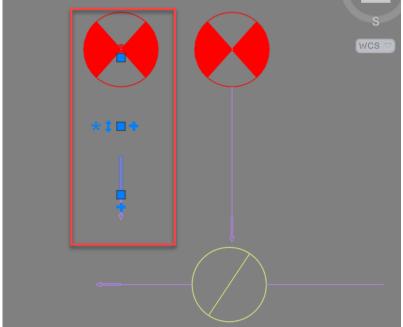
	🙆 MagiCAD V&P - Part Pr	operties				×
	Property		Va	lue		^
	Parttype			her pipe device		
	System			-supply "Heating 1"		
	Storey		Flo	por 1		
	Storey variable 1					
	Storey variable 2					
	Center of part		H =	= 2400.0		
	dptot			0 kPa		
	Power			W 00		
*	Status		No	t defined		
\sim	Description					
1 · · · · · · · · · · · · · · · · · · ·	UserVar 1					_
	UserVar 2					_
	UserVar 3 UserVar 4					_
	UserVar 4 UserVar 5					_
	UserVar 6					_
	UserVar 7					~
	FLOW					*
	Power:	1000	w	Volume:	1000.0	
				volume.	1000.0	·
	Pressure drop:	200.000	kPa			
	It by system					
	OdT by part					
			1			
	dT:	0	°C			
	Object ID					
					Override	
			F	Pick from schematics	Change RI	
					Ok Ca	incel
						111



The pipe was hidden in different ways depending on the 2D-symbol, height and coordinates

Part of the pipe was cut short in the view in some cases. Now the full length is always shown, cut only by the symbol's edge.

The issue that was seen in some cases marked in the image below:



Drawing pipes using plus grips caused problems with some drainage devices

Drawing from some devices caused issues and the drawn pipe had the wrong size or even the geometry was wrong. This has now been fixed:



Sprinkler calculation did not show errors for open ends or unconnected connection nodes

The issue was that when running the sprinkler calculations and there were some open ends in the network, no error was shown, nor was the report opened so the user didn't know what the issue was. The function simply ran and then ended, without anything happening.

Now the error is correctly shown again in case there are issues in the network:



MagiCAD - Show Messages	(2 visible	/ 2 total))		×
System All systems V	System SPR1	Storey Floor 1	Part type Open end/Unsp	Message Multiple open ends found	P (1
Storey				Error: Multiple open ends found	((
All storeys \checkmark					
Part type					
All parts 🗸 🗸					
Message type					
All messages 🗸 🗸					
 Keep calculated data despite errors 					
 Floor Coordinates UCS Coordinates 					
Copy to clipboard					
Mark Selected and Zoom					
Mark All	<				>

Incorrect text for sprinkler standard NFPA 15

We changed the text NFPA 13 to NFPA 15 which is the standard that actually was in use and not NFPA 13 .

Note that we have also added the actual NFPA 13 standard to the calculations in this version - the task mentioned under new features. (*NFPA-13 sprinkler standard has been added to MagiCAD*)

🙆 MagiCAD V&P -	Sprinkler calculation		×
Calculate network			
Calculate system System			
-			
UserCode	Name		
SPR1	Sprinkler 1		
Settings			
Equivalent length of f	ittings		
O EN 12845			
O CEA 4001			
O NFPA 13			
NFPA 15			
O BS 9251:2014			
O EN 16925			
0 211 10323			
Ignore connection	branches shorter than:		50 mm
Show route			
Save data to con	nected drawings		
		Ok	Cancel
		UK	Cancel

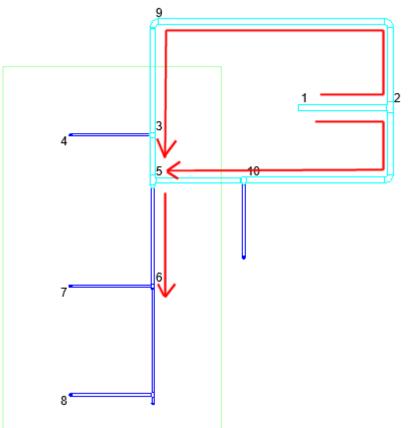


Equivalent length of the tee was calculated incorrectly in sprinkler systems

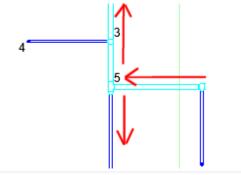
MagiCAD added incorrectly additional equivalent lengths. See the example below:

In the below system:

Previously MagiCAD added equivalent length to pipes 3->5 and 5->6 since the flow came to a tee branch. Since the flow doesn't turn to pipe 3->5, it was an incorrect addition. Now the equivalent tee is no more added to pipe 3->5



Note that for a bullhead tee, the Leqv is added to both pipes.





Previous version

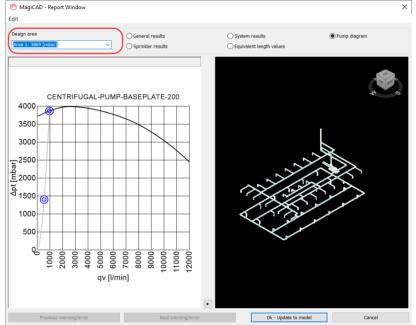
🙆 MagiCA	D - Report	Windo	w																>
Edit																			
Design area					Gener	al results				System	n results		OPur	np diagrai	m				
aaa: 291 [m	bar]			\sim	O Sprink	ler results				O Equiva	lent length value	s							
Level	From	То	k-facto	r C-factor	Height [m]	qv [l/min]	v [m/s]	Size [mm]	L [m]	Leqv [m]	Parts	User code					dp (flow) [mbar]		Warnings
Floor 1	1		2	120	24	4.5	0.0	70.3	20	5.8	1xT		291	292	-2	-2	0	0.0	Hazen-Williams facto
Floor 1	2		3	120	2.3	2.3	0.0	70.3	6.0	10.7	1xB90, 1xT		292	300	-8	-8	0	0.0	Hazen-Williams facto
Floor 1	2		7	120	2.3	2.3	0.0	70.3	9.0	10.8	2xB90	-	292	299	-7	-7	0	0.0	Hazen-Williams facto
Floor 1	3		4	120	2.3	3.0	0.1	28.5	1.0	1.0			300	301	-1	-1	0	0.1	Hazen-Williams facto
Floor 1	4		5 2	3 120	23	15	0.0	28.5	10	25	1xT		301	302	-1	-1	0	0.0	Hazen-Williams facto
Floor 1	4		6 2	3 120	2.3	1.5	0.0	28.5	2.0	3.5	1xT		301	302	-2	-2	0	0.0	Hazen-Williams facto
Floor 1	7		3	120	2.3	0.7	0.0	70.3	1.0	1.0			299	300	-1	-1	0	0.0	Hazen-Williams facto
Floor 1	7		8 2	3 120	2.3	1.5	0.0	28.5	1.0	2.5	1xT		299	300	-1	-1	0	0.0	Hazen-Williams facto

New fix:

Edit																			
Design area	5				C	Genera	al results				System	results				Pump di	agram		
aaa: 291 [mbar]			~		Sprink	ler result	ts			CEquival	ent length value	5						
Level	From	То	k-facto	C-facto	Height [m]	qv [l/min]		Size [mm]	L [m]	Leqv [m]	Parts	User code		p end [mbar]		dp Hst [mbar]			Warnings
Eloor 1	1	2		120	24	45	0.0	70.3	20	5.8	1vT		291	292	-2	-2	0	0.0	Hazen-Williams facto
Floor 1	2	3		120	2.3	2.5	0.0	70.3	6.0	6.9	1xB90		292	300	-8	-8	0	0.0	Hazen-Williams facto
Floor 1	2	/		120	2.3	2.0	0.0	/0.3	9.0	10.8	2xB90		292	299	-7	-7	0	0.0	Hazen-Williams facto
Floor 1	3	4		120	2.3	3.0	0.1	28.5	1.0	1.0			300	301	-1	-1	0	0.1	Hazen-Williams facto
Floor 1	4	5	28	120	23	15	0.0	28.5	10	25	1vT		301	302	-1	-1	0	0.0	Hazen-Williams facto
Floor 1	4	6	2.8	120	2.3	1.5	0.0	28.5	2.0	2.0			301	302	-2	-2	0	0.0	Hazen-Williams facto
Floor 1	7	3		120	2.3	0.5	0.0	70.3	1.0	1.0			299	300	-1	-1	0	0.0	Hazen-Williams facto
Floor 1	7	8	2.8	120	2.3	1.5	0.0	28.5	1.0	2.5	1xT		299	300	-1	-1	0	0.0	Hazen-Williams facto

Switching between sprinkler areas in the sprinkler report didn't work

Now when switching Sprinkler Area the pump diagram updates correctly. Previously it didn't update the diagram and only showed the the diagram from the first sprinkler area.





2.3 Electrical

Elevation problem on uneven sizes (MCE)

Elevation dialog for trays no longer shows trailing zeroes in decimals.

You can now define to show up to 6 decimals for dimensions text varaibles.

Elevation properties are now shown in Part Properties by using one extra decimal (when needed) and automatic zero decimal suppression:

When 1 wcs = 1 mm: Max accuracy is one decimal

When 1 wcs = 1m : Max accuracy is four decimals

X,Y,Z point information is shown as before by using old decimal accuracy (1wcs=1mm: 0 decimals / 1wcs=1m: 3 decimals). This way it is more easier/clearer for the user to read x,y,z point information.

Devices don't get switchboard reference

If cable end point is at the same position as objects installation point and somehow they are not connected, Update drawing data with Circuit references based on power cable connections will now connect the cable to the object.

Fatal error when taking Part Properties

A converted Autocad object that is copied to another drawing which is not connected to a project no longer gives a fatal error when running Part Properties on it.

Changing product ID with Change column value makes a copy

Now it is not possible to edit ID using "Change column values..." functionality for devices and backboxes.

"Change column value" functionality can be used to edit IDs when using Project Manager application.

Viewports are not read correctly after reopening dwg

If multiple viewports are open in a drawing and some of them has other than "2D Wireframe" selected for visual style, MagiCAD viewport preferences were not read properly. Now saved viewport preferences are read correctly when opening a drawing.

Switchboard/host reference lost when copy-pasting only circuit symbols via clipboard AND referred switchboard/host was in same dwg

Fixed a problem when switchboard/host reference was lost when copy-pasting only circuit symbols via clipboard and the referred switchboard/host was in the same DWG.

Installation level, absolute m printout errors

Fixed elevation properties printing when "1 wcs = 1 m" unit system is used Fixed following MCE objects' elevation properties printing: Switchboard and Host device Switchboard Area and Host Area Switchboard Border and Host Border



Enter does not work when installing electrical devices

Now "Enter" key closes the dialog same way as "Ok" button and "Esc" key closes the dialog same way as "Cancel" button even after user has selected another product.

IDs over 10 000 are showing as - in the Project

IDs over 10 000 were not shown properly in the Project. Now they are visible.

2.4 Circuit designer

Problems with switches in CD

Switches got duplicate ID tags, now duplicated tags are removed.

Fixed IDs when copying child parts

When copying child part without the mother part, Circuit ID and Device ID are cleared from the new object.

From unconnected child part, nothing is cleared on copy

2.5 Schematics

The OK-button was disabled in Schematics Text

The "OK"-button was immediately disabled when selecting Text in Schematics, but became active once some other text was selected in between.

This meant that the user wasn't able to select the first text immediately, but had to select some other text in between and then select the actual text that the user wanted to place in the drawing. This has now been fixed.

MagiCAD Schematics -	Select Text Format	×
Text formats:		
Description	Preview	^
Part ID	ABC	
System	ABC	
Memo	Abcdefghij kimnopqrd tuvxyz	
User code	ABC	
		~
Free note text:		
	ОК	ancel



3 Manufacturer Apps

MagiCAD Manufacturer Apps are additional design tools that help users to select and configure the correct products for their projects' needs. Once the desired product has been configured and/or selected, it can be inserted directly into the MagiCAD or Revit project as a BIM object with correct technical information.

Manufacturer Apps published during 2020

BLÜCHER®	Blücher – Drainage devices	Description
	Discipline: Drainage	
	Product Types: Drainage devices	
ETS NORD	ETS NORD – Kitchen Hoods	Description
	Discipline: Ventilation	
	Product Types: Kitchen ventilation products	
SEWATEK	SEWATEK – Service penetration units	Description
SEWATER	Discipline: Piping	
	Product Types: Service penetration units	
Tovenco	Tovenco – Kitchen Hoods	Description
Iovenco	Discipline: Ventilation	
	Product Types: Kitchen hoods	
VALLOX	Vallox – Air handling units	Description
HOME of FRESH AIR	Discipline: Ventilation	
	Product Types: Air Handling Units	

MagiCAD Cloud Selection tools can be accessed through MagiCAD Connect.

MagiCAD Plugins can be accessed through *MagiCAD Plugin Manager*, an extension which helps users to install plugins directly from the MagiCAD user interface.

BEVENT (RASCH Bevent Rasch – Roof cowls, silencers Description Selection Software:Dimensio Discipline: Ventilation Product Types: Roof cowls, silencers